SUNDAY PM

901-12 Long-term Results of Right Latissimus Cardiomyoplasty

John C. Cardone, James A. Magovern, Pyongsoo D. Yoon, Ignacio Y. Christlieb, George J. Magovern, Sr.. *Allegheny General Hospital, Allegheny-Singer Research Institute, Pittsburgh, PA*

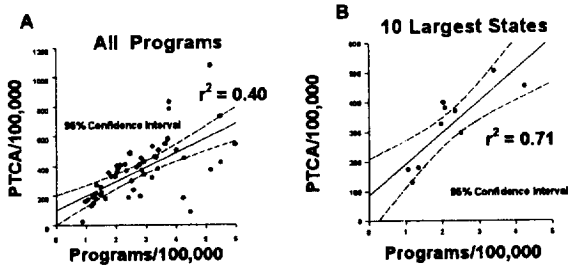
Initial experimental and clinical studies have shown that cardiomyoplasty using the right latissimus dorsi can improve left ventricular (LV) function early after operation. This study presents the long-term results of clinical application of this procedure. Between March 1991 and November 1992, 16 patients (12 men, 4 women; mean age 57; range 33–77 years) underwent operation. Survivors have now been followed for 18 months with serial right heart catheterization and radionuclide angiography at 6 month intervals. The operative mortality was 6% (1/16), but 3 additional patients experienced sudden death within 6 months of operation. Survival was 62.5% (10/16) at 12 months and 56.3% (9/16) at 18 months. The LV stroke work index (LVSWI) was improved at each postoperative interval, but the differences were not statistically significant. Left ventricular ejection fraction (LVEF) significantly increased from 26.1 ± 5.3 to 33.4 ± 10.3 ($p < 0.05$), 6 weeks after operation and was not different from baseline thereafter. The LV end-diastolic volume decreased significantly at 6 months from 306.1 ± 71 to 249.4 ± 69 mL ($p < 0.01$), and remained lower than the preoperative value in subsequent follow-up. Comparison of preoperative LVEF in 24 month survivors (5) and non-survivors (8) revealed that survivors had an LVEF of 30.2 ± 4.38 and non-survivors were 22.7 ± 2.58 ($p < 0.05$). Preoperative LVSWI was also significantly greater in survivors 36.4 ± 6.91 gm-cm/m^2 vs 20.1 ± 8.26 gm-cm/m^2, ($p < 0.05$). Overall survival was limited by the occurrence of sudden death, but survivors had improved functional capacity and stabilization of cardiac size and function. We conclude that careful selection of patients with better preserved, preoperative LV function may yield improved long-term survival in right latissimus cardiomyoplasty.

ANGIOPLASTY — CONVENTIONAL

901-13 Interstate Variability of Rates of Percutaneous Transluminal Coronary Angioplasty in the United States Medicare Population

Norman S. Kato, Deborah A. Meehan, Dianne H. Noble, Mehmet E. Ergun, Robert H. Brook, Grace M. Carter. *UCLA Medical Center, Los Angeles, CA; RAND, Santa Monica, CA*

Percutaneous Transluminal Coronary Angioplasty (PTCA) procedures are commonly performed in the United States (US) for the invasive management of coronary artery disease (CAD). Because of the relative expense and frequency of PTCA and increasingly elderly US population, the annual health care expenditure for PTCA is significant and will continue to expand. The clinical indications for PTCA have been fairly well-established. Our study tested the hypothesis that the incidence of PTCA per State was constant. We examined the 1992 PTCA database from the Health Care Financing Administration (HCFA) which included procedure volume for 805 US hospitals performing PTCA on Medicare patients and was aggregated by State. Population data for age >65 was obtained for each State from the US Census Bureau for 1990. We found a significant variability in PTCA rates per 100,000 population age >65 (PTCA/100,000) ranging from 89 to 831. For the 10 States with the largest population age >65, the PTCA/100,000 ranged from 130 to 503. As the number of programs (per 100,000 age >65) increased, the PTCA/100,000 increased ($r^2 = 0.40$; $P < 0.0001$) (A). This was also observed for the 10 largest States and was highly significant ($r^2 = 0.71$; $P = 0.002$) (B). Low rates of PTCA/100,000 were associated with Certificate of Need programs. We conclude that: 1) PTCA/100,000 varies considerably from State to State despite established indications, 2) Certificate of Need programs may reduce PTCA/100,000 rates, and 3) investigation into the appropriateness of PTCA should be performed on an individual statewide basis.



901-14 Impact of Ionic and Non-ionic Contrast Media on Post-PTCA Ischemic Complications: Results from the EPIC Trial

Frank V. Aguirre, Eric J. Topol, Thomas J. Donohue, Morton J. Kern, Jeffrey D. Leimberger, Robert M. Califf, EPIC Investigators. *St. Louis University, St. Louis, MO*

Previous studies have demonstrated greater thrombogenic properties and higher rates of post-PTCA ischemic complications with use of non-ionic (NI) compared to ionic (I) contrast media. To assess the role of I vs NI contrast media on thrombus formation and ischemic complications, we prospectively evaluated the post-PTCA outcome of 1,930 patients who were enrolled in the EPIC trial. Patients were enrolled if presenting with acute MI (≤7 days), unstable angina, or had high risk angiographic characteristics. Patients received aspirin (325 mg), procedural heparin, and either placebo infusion (n = 637) or a glycoprotein IIB/IIIA receptor antibody, c7E3Fab (n = 1293). I and NI were used in 257 and 380 patients receiving placebo and in 505 and 708 patients receiving c7E3Fab, respectively. More patients receiving NI were enrolled with acute MI (3.5% vs 1.4%), and more patients receiving I had unstable angina (26.1% vs 22.4%). Other baseline and procedural characteristics were similar between patient groups.

	Placebo		c7E3Fab	
Outcome	Ionic (n = 257)	Non-ionic (n = 380)	Ionic (n = 505)	Non-ionic (n = 788)
Post-PTCA thrombus (%)	17	18	15	15
Q-wave MI (%)+	1.6	3.2	0.2	1.4
Emergent CABG (%)+	2.7	4.5	2.0	2.5
Death (%)+	0.4	1.6	0.4	1.4

+ in-hospital; MI = myocardial infarction; CABG = coronary bypass surgery

After controlling for c7E3Fab randomization by logistic regression, ionic contrast agents were associated with a lower probability of Q-wave MI (odds ratio: 0.32; p = 0.012) and death (odds ratio: 0.27; p = 0.016). These preliminary data suggest that the selection of ionic contrast media during PTCA should strongly be considered.

901-15 Interventional Cardiologists Suffer an Excessive Incidence of Spinal Disc Disease

Allan M. Ross, David Borenstein, Ellen Jenkins, Shyuan Cho, Jerome Segal. *The George Washington University, Washington, DC*

Back and neck pain are common complaints and frequent reasons for workdays lost amongst interventional cardiologists (Card) but neither an increased frequency of spinal skeletal problems within this specialty nor its presumed relationship to radiation shielding lead aprons has been previously verified. We mailed surveys to 875 interventional cardiologists (who performed an average of 12.1 ± 7.4 procedures per week) and for comparison, mailed 595 surveys to orthopods (who spend long hours standing, but without wearing lead) and 990 rheumatologists (with neither "risk factor"). Since the data on the latter 2 groups did not differ, they are combined as "controls." The overall survey response was 30%.

	Card (N = 385)	Controls (N = 329)	
Age	46.9	47.2	ns
Spine pain/medical therapy	14.0%	6.4%	p < 0.0001
Spine surgery	5.2%	3.6%	ns
Lost work days	21.3%	12.5%	p = 0.002
Number days lost/year	2.5	0.02	p = 0.04
Cervical disc disease	6.5%	0.03%	p ≤ 0.0001
Lumbar disc disease	7.5%	6.0%	ns
Multiple disc disease levels	3.4%	0.0%	p = 0.007

Interestingly, we found a predominance of cervical and not low back complaints by interventionalists, although combined upper and lower spine complaints (multiple levels) were more common in the cardiology group. *Conclusion:* Long hours spent performing procedures while wearing radiation-shielding lead aprons (which are purported to produce >300 pounds per square inch of intervertebral disc pressure), induces a distinct occupational hazard, "interventional cardiologist's disc disease".